WHAT IS CLAIMED IS:

- 1. A method of identifying a candidate compound that modulates $\Delta TR\alpha 2$ polypeptide activity, the method comprising:
 - a) obtaining a $\Delta TR\alpha 2$ polypeptide
 - b) contacting the $\Delta TR\alpha 2$ polypeptide with a test compound, and
- c) assaying for binding of the test compound to the $\Delta TR\alpha 2$ polypeptide, wherein binding indicates that the test compound is a candidate compound.
- 2. A method of identifying a candidate compound that modulates $\Delta TR\alpha 2$ polypeptide activity, the method comprising:
 - a) obtaining a $\Delta TR\alpha 2$ polypeptide bound to a $\Delta TR\alpha 2$ ligand,
- b) contacting the $\Delta TR\alpha 2$ polypeptide bound to the $\Delta TR\alpha 2$ ligand with a test compound, and
- c) measuring the displacement of the $\Delta TR\alpha 2$ ligand from the $\Delta TR\alpha 2$ polypeptide, wherein displacement indicates that the test compound is a candidate compound that modulates $\Delta TR\alpha 2$ polypeptide activity.
- 3. A method of identifying a candidate compound that modulates $\Delta TR\alpha 2$ polypeptide activity, the method comprising:
 - a) obtaining a test sample containing a $\Delta TR\alpha 2$ polypeptide,
 - b) incubating the test sample with a test compound, and
 - c) assaying the test sample containing the test compound for an alteration in type II 5' deiodinase (D2) activity, such that a test compound that alters D2 activity when compared to a test sample that was not incubated with the test compound is a candidate compound.

- 4. The method of claim 3, wherein the test compound decreases the amount of D2 activity.
- 5. A method of identifying a candidate compound that modulates $\Delta TR\alpha 2$ polypeptide activity, the method comprising:
 - a) obtaining a test sample containing a $\Delta TR\alpha 2$ polypeptide,
 - b) performing an actin binding assay with the test sample in the presence of a test compound, such that a test compound that alters the binding of p29 vesicles to F-actin when compared to a test sample that was not incubated with the test compound is a candidate compound.
 - 6. The method of claim 1, wherein the test compound is a flavone.
 - 7. The method of 2, wherein the test compound is a flavone.
 - 8. The method of claim 3, wherein the test compound is a flavone.
 - 9. The method of claim 5, wherein the test compound is a flavone.
 - 10. The method of claim 1, wherein the test compound is an aurone.
 - 11. The method of claim 2, wherein the test compound is an aurone
 - 12. The method of claim 3, wherein the test compound is an aurone
 - 13. The method of claim 5, wherein the test compound is an aurone
 - 14. The method of claim 1, wherein the test compound is a T4 analog.
 - 15. The method of 2, wherein the test compound is a T4 analog.
 - 16. The method of claim 3, wherein the test compound is a T4 analog.
 - 17. The method of claim 5, wherein the test compound is a T4 analog.
 - 18. A compound identified by the method of claim 1.
 - 19. A compound identified by the method of claim 2.
 - 20. A compound identified by the method of claim 3.
 - 21. A compound identified by the method of claim 5.

- 22. A method of treating a subject who has a neurologic disorder, the method comprising administering to the subject a therapeutically effective amount of a $\Delta TR\alpha 2$ ligand.
- 23. A method of treating an individual who has a mood disorder, the method comprising administering to the individual a therapeutically effective amount of a $\Delta TR\alpha 2$ ligand.
- 24. An isolated nucleic acid molecule comprising a $\Delta TR\alpha 2$ targeting construct comprising a DNA sequence homologous to a sequence encoding a mouse $\Delta TR\alpha 2$ polypeptide, wherein when the construct is introduced into a mouse cell or an ancestor of the mouse cell at an embryonic stage, and the construct-derived sequences are incorporated into an endogenous $TR\alpha$ gene, the cell does not express $\Delta TR\alpha 2$ in significant amounts.
 - 25. A vector comprising the nucleic acid of claim 24.
- 26. The isolated nucleic acid molecule of claim 24, wherein the construct comprises a nucleic acid sequence homologous to intron 7 of a mouse TRα gene.
- 27. The isolated nucleic acid molecule of claim 24, wherein introduction of the construct disrupts the AP1, ctf, GR, SP1, or ets1 sequence of intron 7.
- 28. The isolated nucleic acid molecule of claim 24, further comprising a gene selection cassette.
- 29. The isolated nucleic acid molecule of claim 24, wherein the construct comprises a nucleic acid sequence homologous to exon 10 of a mouse TRα DNA sequence.
- 30. A transgenic, non-human animal whose germ cells and somatic cells comprise a mutated $TR\alpha$ gene, the mutation being sufficient to inhibit binding of thyroxine (T4) to $\Delta TR\alpha 2$ transcribed from the gene, said mutated gene being introduced into the non-human animal or an ancestor of the animal at an embryonic stage, wherein the animal, if homozygous for the mutation, has impaired motor function.
- 31. A transgenic, non-human animal of claim 30, wherein the animal is a mouse or a rat.

- 32. A transgenic, non-human animal of claim 30, wherein the animal is a goat, sheep, or a pig.
 - 33. A cell derived from the animal of claim 30.
 - 34. The cell of claim 33, wherein the cell is an astrocyte.
- 35. The transgenic animal of claim 30 wherein the $TR\alpha$ gene is mutated in intron 7.
- 36. The transgenic animal of claim 19, wherein the $TR\alpha$ gene is mutated in exon 10.
- 37. A transgenic non-human animal whose somatic and germ cells comprise a disrupted $TR\alpha$ gene, the disruption being sufficient to inhibit the binding of T4 to a $\Delta TR\alpha 1$ or $\Delta TR\alpha 2$ translation product of the $TR\alpha$ gene, the disrupted gene being introduced into the animal or an ancestor of the animal at an embryonic stage.
- 38. The animal of claim 37, wherein the disruption comprises a mutation in intron 7 of the $TR\alpha$ gene.
- 39. The animal of claim 37, wherein the disruption consists of a deletion of all or a part of intron 7 of the $TR\alpha$ gene.
 - 40. The animal of claim 37, wherein the disruption is in exon 10 of the $TR\alpha$ gene.
- 41. The animal of claim 37, wherein the disruption consists of a deletion of all or part of exon 10 of the $TR\alpha$ gene.
- 42. The animal of claim 37, wherein the non-human animal, if homozygous for the disrupted gene, has impaired motor function.
 - 43. The animal of claim 37, wherein the non-human animal is a rodent.
 - 44. The animal of claim 37, wherein the animal is a mouse.
 - 45. The animal of claim 37, wherein the animal is a rat.